

Original Article

The Influence of Profitability, Liquidity, and Company Size on Debt Policy in Energy Sector Manufacturing Companies on the Indonesia Stock Exchange (IDX)

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Abstract - The objective of this study is to assess the impact of profitability, liquidity, and firm size on the debt policy of mining entities that are publicly traded on the Indonesian Stock Exchange. Multiple prior studies on debt policy yield divergent findings. Hence, further investigation is required to reassess the hypothesis on debt policy. This study focuses on a population consisting of 53 mining enterprises. A purposive sampling strategy was employed to gather a sample of 49 entities for a period of 5 years (2018–2022), resulting in a total of 54 observations. The research data was acquired from the Indonesia Stock Exchange's Capital Market Directory. Multiple regression analysis is the methodology utilized for data analysis. The analysis found that profitability has a positive and significant impact on debt policy, whereas liquidity has a negligible impact. Additionally, business size has a significant and negative impact on debt policy.

Keywords - Debt policy, Firm size, Indonesia stock exchange, Liquidity, Profitability, Debt policy.

1. Introduction

Currently, we are observing substantial and rapid growth, primarily driven by technological developments. Companies across many sectors must foster innovation in product development, improve overall corporate performance, and locate the most advantageous sources of capital to guarantee expansion and achievement. As the company's rate of expansion rises, so does its need for capital. Rahmawantari (2022) argues that evaluating the expansion of a company registered on the Indonesian Stock Exchange can be done by analyzing the yearly increment in the number of entities added to the exchange.

However, as the company expands, its use of debt increases. Companies that choose to use debt financing rather than equity financing will encounter a significant increase in their debt levels. Allegedly, there are additional factors that influence the debt policy, including the corporation's size, liquidity, and profitability. Companies that possess extensive fixed assets can obtain large sums of debt by utilizing these assets as collateral for loans. The citation is attributed to Tarigan et al. (2022).

Debt policy is quantified by the Debt to Equity Ratio (DER). The debt policy is expected to be primarily influenced by profitability. Profitability specifies a corporation's capability to achieve financial benefit or profit. This is

consistent with the concept of a pecking order proposed by Myers (1984), which delineates a certain sequence of financial alternatives. According to this view, management would give the highest priority to utilizing retained earnings, followed by debt, and only consider issuing stocks as a final recourse. The study performed by Estuti et al. (2019) indicates that profitability has a positive with significant impact on debt policy. Profitable businesses frequently rely on minimal debt because their retained earnings are already sufficient to meet the majority of their financial needs, such as investments. This study is consistent with the results of the Lestari study (2022) and the study conducted by Kristina et al. (2019). Nevertheless, a clear and positive impact of profitability on debt policy can be shown when comparing it to the findings of the Amalia research (2020) and the Rohmah study (2022).

Liquidity is a significant factor in setting debt policy. Liquidity pertains to a company's capability to reach its immediate financial obligations. A corporation is said to be liquid if it is capable of meeting its financial obligations promptly. The study was conducted by Putri et al. in 2022. Instead of resorting to debt, the corporation will use its robust liquidity as an internal capital source, resulting in a lower amount of corporate debt. Beny (2022) discovered that liquidity has a positive impact on debt policy; however, this impact does not reach statistical significance. Andri, Erinos, and Salma (2019) and Masril et al. (2021) have shown that



liquidity has a significant and negative effect on the entity's debt policy. Dwi and Viriany (2019) found that liquidity variables have a significant impact on debt policy. Increased liquidity in a corporation can inspire trust in its creditors. Another factor to take into account while developing the debt policy is the company's size or scale.

According to the Nintha study (2021), the size of a company is frequently used as an indicator of its vulnerability to bankruptcy, with larger organizations being seen as more likely to experience operational issues. This finding aligns with the analysis undertaken by Kristina et al. (2019), which suggests that multiple factors influence the debt policy (DER). More precisely, the current ratio has a favorable and substantial influence on the debt policy or DER. (Suryani, 2020).

2. Materials and Methods

2.1. Results of Descriptive Statistical Test

This research intends to discover the effect of profitability, liquidity and firm size on debt policy in mining entities registered on the Indonesian Stock Exchange. The research was designed around a quantitative approach. The hypothesis for this objective has been formulated as below:

- H1: Profitability affects debt policy.
- H2: Liquidity affects debt policy.
- H3: The size of the company influences the debt policy.

2.2. Research Methodology

Researchers utilize quantitative research methods to collect data on the impact of independent factors, namely profitability and liquidity, on lending policies of manufacturing entities registered on the IDX throughout the years 2018 to 2022. This research employed a non-probability sampling strategy, specifically the purposive sampling method.

A research sample consisting of 49 manufacturing organizations from the energy sub-sector registered on the IDX throughout the year 2018–2022 was selected. Data analysis involves the application of numerous techniques, including descriptive statistics, classical assumption tests (such as normality, heteroscedasticity, multicollinearity, and autocorrelation tests), multiple linear analysis, and hypothesis testing (including t-tests and F-tests).

3. Results and Discussion

3.1. Results of Descriptive Statistical Test

Based on the table 1, the following information can be obtained:

3.1.1. Debt Policy (Y)

The descriptive statistics table reveals that PT Ererindo Wahanatama Tbk has the lowest value of 0.02, while PT Obm Drilchem Tbk has the greatest value of 5.44. The mean value is 1.8035, and the standard deviation is 1.33511.

3.1.2. Profitability (X₁)

The descriptive statistics table reveals that PT Ererindo Wahanatama Tbk has the lowest value of 0.02, while PT Obm Drilchem Tbk has the greatest value of 5.44. The mean value is 1.8035, and the standard deviation is 1.33511.

3.1.3. Liquidity (X₂)

The liquidity variable is quantified using the Current Ratio (CR) ratio with PT. Dwi Guna Laksana Tbk. Having the lowest value of -43.09. PT. Borneo Olah Sarana Tbk. scored the highest value of 6.34, with an average value of 0.8410 and a standard deviation of 4.18164.

3.1.4. Company Size (X₃)

The logarithmic score of total assets quantifies the company size variable; the average value for company size is 12.5354 with a standard deviation of 0.88404. PT Akbar Indomakmur Stimec Tbk. has the lowest value at 10.24, while PT Adaro Energi Indonesia Tbk. has the highest value at 14.22.

3.2. Classical Assumption Test

The classical assumption trial in this study comprises tests of normality, heteroscedasticity, multicollinearity, and autocorrelation.

3.2.1. Normality Test

According to Figure 1, it can be inferred that the data is normally distributed, as the histogram does not display any skewness to the right or left. In this study, the normality test employs a normal Probability Plot (P-P plot) to assess the distribution of the data. The test findings indicate that the data points on the graph closely align with and follow the diagonal line. Therefore, it can be inferred that the data utilized in this study exhibits a normal distribution.

Table 1. Results of descriptive statistical test

	N	Minimum	Maximum	Mean	Std. Deviation
DER	238	.02	5.44	1.8035	1.33511
ROA	238	-.21	.34	.0480	.11904
CR	238	-43.09	6.34	.8410	4.18164
LOG	238	10.24	14.22	12.5354	.88404
Valid N (listwise)	238				

Source: Output Program SPSS 25,2024

3.2.2. Multicollinearity Test

The table of outcomes from the multicollinearity test in this analysis is presented below:

Table 2. Multicollinearity test

Model	Coefficients ^a				Sig.	Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficients	t		Tolerance	VIF
	B	Std. Error	Beta				
1 (Constant)	1.822	.750		2.430	.016		
ROA	2.953	.441	.411	6.694	.000	.947	1.056
CR	.011	.012	.052	.860	.390	.973	1.027
LOG	-.134	.060	-.138	-2.225	.027	.923	1.084

a. Dependent Variable: DER

Source: Output Program SPSS 25,2024

It is clear from the above table that the profitability variable has a tolerance value of 0.947, which is smaller than or equal to 0.10. Additionally, this variable has a VIF value of 1.056, which is higher than or equal to 10. Thus, it can be deduced that there are no signs of multicollinearity. Additionally, it has been established that the liquidity variable has a tolerance value of 0.973, which is less than or equal to 0.10. Additionally, it has a VIF value of 1.027, which is greater than or equal to 10. These values indicate that there are no signs of multicollinearity. The tolerance score for the firm size variable is 0.923, which is within the range of 0.10 or less. In addition, the VIF value is 1.084, which exceeds or equals 10. There is a lack of observable evidence of multicollinearity.

3.2.3. Autocorrelation Test

As indicated in the outcomes of the Durbin-Watson test, it is evident that the autocorrelation test yielded a D-W value of 1.551, which falls within the range of -2 to +2. Therefore, it can be inferred that there is no autocorrelation present in the research data, allowing for the acceptance of the regression model.

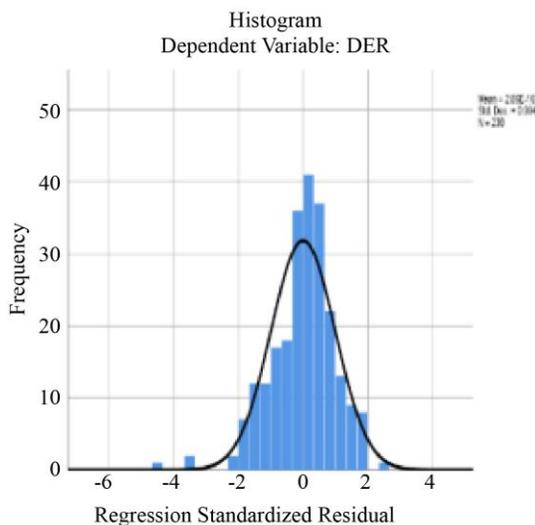


Fig. 1 Normality test

Source: Output Program SPSS 25,2024

Normal P-P Plot of Regression Standardized Residual

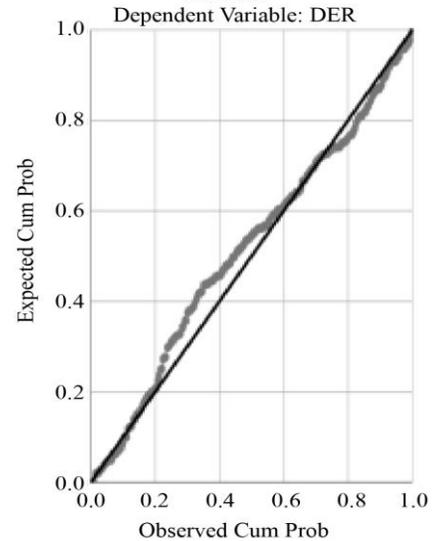


Fig. 2 Normality test

Source: Output Program SPSS 25,2024

3.2.4. Heteroscedasticity Test

From the scatterplot result, it is evident that the data points lack a discernible pattern. Furthermore, the dots disperse both greater and beneath the numerical value of zero along the Y-axis. The regression model used in this work is devoid of heteroscedasticity.

Table 3 Autocorrelation test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.405 ^a	.164	.153	.78671	1.551

a. Predictors: (Constant), LOG, CR, ROA
b. Dependent Variable: DER

Source: Output Program SPSS 25,2024

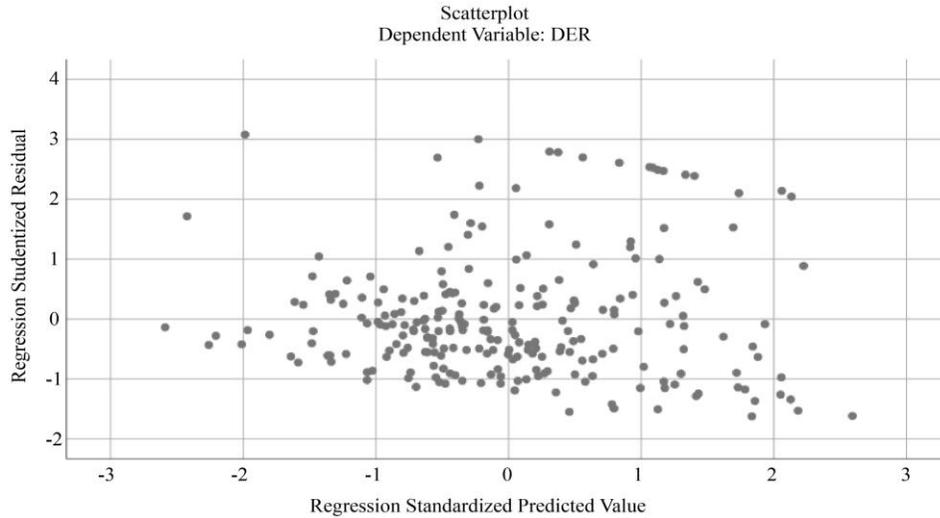


Fig. 3 Heteroscedasticity test

Source: Output Program SPSS 25,2024

Table 3. Regression analysis test results

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.822	.750		2.430	.016		
ROA	2.953	.441	.411	6.694	.000	.947	1.056
CR	.011	.012	.052	.860	.390	.973	1.027
LOG	-.134	.060	-.138	2.225	.027	.923	1.084

a. Dependent Variable: DER

Source: Output Program SPSS 25,2024

3.3. Multiple Regression Analysis

According to the multiple linear regression analysis that has been performed with the assistance of SPSS, the regression model is acquired as follows:

$$Y = 1,822 + 2,953 X_1 + 0,11 X_2 - 0,134 X_3 + e$$

From the above equation, it is known that the constant value in the regression equation is 1.822, stipulating that if the independent variables of profitability, liquidity, and company size are zero, then the value of the dependent variable debt policy as quantified by DER (debt to equity ratio) will be 1.822.

3.3.1. Coefficient of Determinants (Adjusted R2)

The coefficient of determination test reveals that the corrected R square value is 0.153. This illustrates that the variable affected by external factors, particularly debt policy, can be translated by the variables that influence it, namely profitability, liquidity, and company size, with an explanatory power of 15.3%. The accuracy of the value 84.7% is susceptible to the impact of external variables that are not considered in this study.

Table 4. Test Results of the Coefficient of Determination (R2)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.405 ^a	.164	.153	.78671

a. Predictors: (Constant), LOG, CR, ROA

b. Dependent Variable: DER

Source: Output Program SPSS 25,2024

3.3.2. Feasibility Test for the Model (F Test)

With a confidence level of 95% or $\alpha = 0.05$, the F table can be calculated using the formula $F_{table} df1 = (n-k-1) = (238-3-1) = 234$, and $df2 = (k-1) = (3-1) = 2$. The F table has a score of 2.643. The computed F value in the F test outcomes table exceeds the F table value, namely $15.625 > 2.643$. Additionally, the F test can be performed by differentiating the p-values.

The calculated significance score is 0.000, which indicates that it is below the threshold of 0.05. Hence, it can be deduced that the three models analyzed in this study are suitable for conducting research.

Table 5. F test result

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	28.344	3	9.448	15.265	.000 ^b
	Residual	144.827	234	.619		
	Total	173.171	237			
a. Dependent Variable: DER						
b. Predictors: (Constant), LOG, CR, ROA						

Source: Output Program SPSS 25,2024

Table 6. T-test result

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.822	.750		2.430	.016
	ROA	2.953	.441	.411	6.694	.000
	CR	.011	.012	.052	.860	.390
	LOG	-.134	.060	-.138	-2.225	.027
a. Dependent Variable: DER						

Source: Output Program SPSS 25,2024

3.3.3. T-test

According to the t-test table provided above, the findings are as follows: The profitability variable, as quantified by the Return On Assets (ROA), has a significant score of 0.000, which is below the threshold of 0.05. In addition, the computed t value of 6.694 exceeds the critical t value of 1.970. The analysis confirms the theory by showing that profitability has a significant and positive influence on debt policy. There is a direct correlation between a corporation's profitability and debt. As the firm's profitability rises, its level of debt also climbs. Besides that, if the entity's profitability declines, its debt will also decrease. In essence, this means that when the company's profitability rate rises, there is a proportional enhance in the amount of debt used for the entity's operational financing activities. Organizations with a high level of profitability are perceived as having the capacity to fulfill their financial obligations. Hence, the corporation can sustain increasing its debt borrowing as long as the benefits obtained from the loan surpass the expenses borne by the organization. Fatmawati and Takarini (2022) uncovered a robust and positive relationship between profitability and debt policy. However, the results of this study oppose the findings of Nurwani (2020) and Umdiana et al. (2021), who have shown that profitability has a negative and insignificant impact on debt policy. The organization's insufficient productive assets result in a net profit that is not allocated towards long-term investment but rather towards the company's operational activities, particularly sales.

The liquidity variable's significance value, as determined by the Current Ratio (CR), is 0.390, exceeding the threshold of 0.05. However, the t score of 0.860 is lower than the critical t value of 1.970. Thus, it may be inferred that liquidity does

not influence debt policy, resulting in the rejection of the hypothesis. The debt policy of a firm is not significantly affected by liquidity, as higher liquidity indicates that the company has a greater capacity to service its debt using its easily accessible assets. Furthermore, a firm's liquidity does not directly determine whether management or the entity should utilize debt to subsidize operational activities. Furthermore, the degree of liquidity within a corporation does not prompt creditors to trust the entity's capability to repay its loan. The entity's insufficient liquidity suggests that, although it can fulfill its immediate debt obligations, the management acknowledges the need to protect the company's financial stability. This is because the company directs its financial resources towards prioritizing the implementation of enhanced operational needs.

This aligns with the pecking order idea, which delineates a precise sequence of financial decisions. According to this view, funding from retained earnings is prioritized above debt, which is seen as a secondary alternative. This preference arises from the company's restricted availability of liquid assets, which may not always be adequate to finance operating activities without relying on external loans (Myers 1984). However, Rufiah's (2020) analysis demonstrated that liquidity has a positive with significant influence on debt policy. The level of investment in highly liquid assets indicates that liquidity is a major concern. The p-value for the corporate size variable, computed using the logarithm of the total assets, is 0.027, which is below the significance level of 0.05. Furthermore, this variable's t-value is 2.225, which surpasses the critical t-value of 1.970. The analysis confirms the idea that the company's size has a significant negative influence on its debt strategy. Major corporations will be motivated to make

use of equity financing. In addition, large organizations have easier access to financial markets in comparison to smaller businesses. Organisations that provide external partners with clearer and more easily understood annual financial statements will have lower agency costs compared to organisations that have significant amounts of unequal information.

4. Conclusion

The research's goal is to discover the impact of profitability, liquidity, and firm size on debt policy in mining entities that are publicly traded on the Indonesia Stock Exchange from 2018 - 2022. The ROA (Return On Assets) ratio was used to determine profitability. The CR (current ratio) ratio. The logarithmic value of the total assets. The debt policy was assessed using the Debt-to-Equity Ratio (DER). The research discovery specifies that profitability positively influences debt policy, liquidity does not have a significant influence on debt policy, and company size has a negative and significant influence on debt policy within the energy sector manufacturing entities registered on the IDX from 2018 to 2022.

This is consistent with the pecking order idea, which delineates a precise sequence of financial decisions. According to this approach, the prioritized method of funding is through retained profits, whereas debt is regarded as a secondary alternative. This study aligns with the pecking order theory, which outlines a specific sequence of financing decisions. According to this theory, retained profits are the preferred choice for financing, while debt is considered a secondary option (Myers 1984).

The research limitations are as follows: first, the research only used three independent variables: Profitability, Liquidity and Firm size. Second, the research samples used only 49 sample entities were acquired for 5 periods of data (2018-2022) with 54 observations.

This study only analyzes three independent variables: liquidity, profitability, and company size. Hence, to conduct additional research, it is possible to include other autonomous factors that are believed to influence debt policy, such as sales growth, management ownership structure, asset structure, free cash flow, and business risk.

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